Abstract of the Disclosure

Integrated circuit antifuse circuitry is provided. A metal-oxide-semiconductor (MOS) antifuse transistor serves as an electrically-programmable antifuse. In its unprogrammed state, the antifuse transistor is off and has a relatively high resistance. During programming, the antifuse transistor is turned on which melts the underlying silicon and causes a permanent reduction in the transistor's resistance. A sensing circuit monitors the resistance of the antifuse transistor and supplies a high or low output signal accordingly. The antifuse transistor may be turned on during programming by raising the voltage at its substrate relative to its source. The substrate may be connected to ground through a resistor. The substrate may be biased by causing current to flow through the resistor. Current may be made to flow through the resistor by inducing avalanche breakdown of the drain-substrate junction or by producing Zener breakdown of external Zener diode circuitry connected to the resistor.